

GOLEV, B.T. [Holiev, B.T.]

Paleogeography of the Eocene in the outer anticlinal zone
and Borislav subzone in the Carpathian piedmont fault. Pyt.
geol. no.9:20-29 '58. (MIRA 13:4)
(Carpathian Mountains--Paleogeography)

GOLEV, B.T.

Stratigraphy of Eocene sediments in Northern Bukovina and the
Pokutya. Izv. vys. uchob. zav.; geol. i razv. 1 no.8:36-42 Ag
'58. (MIRA 12:9)

L'vovskiy universitet (n. Iv. Franko, Kafedra istoricheskoy
geologii i paleontologii.

(Chernovtsy Province--Geology, Stratigraphic)

(Pokutya--Geology, Stratigraphic)

VYALOV, O.S. , akademik; GOLEV, B.T.

Classification of paleodictyon. Dokl.AN SSSR 134 no.1:175-178
S '60. (MIRA 13:8)

1. Vsesoyuznyy zaochnyy politekhnicheskiy institut. 2. Akademiya
nauk USSR (for Vyalov).
(Paleontology)

. GOLEV, B.T.

Preparation and staining of nummulite tests. Vop.mikropaleont.
no.3:132-135 '60. (MIRA 13:7)

1. L'vovskiy universitet, kafedra istoricheskoy geologii.
(Nummulites) (Micropaleontology)

GOLEV, B.T.; KHILOPONIN, K.L.

Nomenclature and distinctive characters of some granulated nummulites.
Vop. mikropaleont. no.4:104-120 '60. (MIRA 14:5)

1. Vsesoyuznyy zaочnyy politekhnicheskiy institut, Moskva i
Ukrainskiy nauchno-issledovatel'skiy geologo-razvedochnyy institut,
L'vov.

(Nummulites)

GOLEV, B.T.

Representatives of the genera Operculina and Neoperculinoides
from Eocene sediments of the Bukovina-Pekuty in the
Carpathians. Paleont.sbor. [Lvov] no.1:61-69 '61. (MIRA 15:9)

1. Vsesoyuznyy zaochnyy politekhnicheskii institut, Moskva.
(Carpatian Mountain region--Foraminifera, Fossil)

GOLEV, B.T.

Genus *Operculinoides* Hanzawa. Vop. mikropaleont no. 5:112-120
'61. (MIRA 14:8)

1. Vsesoyuznyy zaochnyy politekhnicheskiy institut, Moskva.
(Foraminifera, Fossil)

GOLEV, B.T.

Possible presence of salt deposits in the Krasno zone of the
Carpathians. Izv.AN SSSR.Ser.geol. 26 no.7:105-110 J1 '61.
(MIRA 14:7)

1. L'vovskiy gosudarstvennyy universitet.
(Carpathian Mountains--Salt deposits)

GOLEV, B.T.

Mammulites of the Eocene of southeastern Turkmenistan
(Badkhyz) and their taxonomic position. Vop. mikropaleont.
no.6:91-106 '62. (MIRA 15:11)

1. Vsesoyuznyy zaochnyy politekhnicheskii Institut,
Moskva.

(Badkhyz--Mammulites)

GOLEK, B.P.

Taxonomic significance of some morphological characteristics of the
representatives of the subfamily Mammulinae. Zool. zhurn. 1964, vol. 13, no. 8:156-167. (NIPA 18:5)

1. Unpublished study notes from B. P. Golek.

VYALOV, J.S.; GULEV, B.T.

Redemption of the Crimea. *Izv. V. Vost. Obshch.*, 1927, 1, 1927.

7 no. 3:24-30 Mr. 104.

(MIRA 18:3)

1. Institut geologii gornicheskikh i Chernykh metallov, kh AN UkrSSR
i Universitet iruchbyvnykh nauk, L'viv, Ukraïna.

VYALOV, G.S.; GOLEV, B.T.

Detailed subdivision of Palaeodictyonidae group. Biol. Moll. Stud.
geol. 40 no.2:93-114 Mr-Apr '65. (MIRA 16:5)

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COLEV, I.F.

Single seeds in sugar beets. Agrobiologiya no.1:155-156 Ja-F
'62. (MIRA 15:3)

1. Vserossiyskiy nauchno-issledovatel'skiy institut sakharnoy
svekly i sakhara, Ramon', Voronezhskaya oblast'.
(Sugar beets)

PHASE I BOOK EXPLOITATION

SOV/6390

Golev, Konstantin Vladimirovich

Raschet dal'nosti deystviya radiolokatsionnykh stantsiy (Calculation of Radar Range) Moscow, "Sovetskoye radio", 1962. 204 p.
Errata slip inserted. 12,300 copies printed.

Ed.: T.M. Lyubimova; Tech. Ed.: V.V. Belyayeva.

PURPOSE: This book is intended for engineers and students of advanced courses in radio engineering schools of higher education.

COVERAGE: The theory and methods for the graphical solution of radar-range equations by means of point and other types of targets with or without external interference are discussed. General formulas and universal graphs for computation of operating range under conditions of smooth and rough spherical earth surface effect are derived along with the probability characteristics of various types of signal detection. The author thanks V.A. Fok, P.A. Azrilyant, M.G. Belkina, T.V. Solov'yev,

Card 1/8

Calculation of Radar Range

SOV/6390

A.T. Potekhin and M.A. Yevdokimov for their cooperation. There are 103 references: 50 Soviet (8 translations), 52 English, and 1 French.

TABLE OF CONTENTS:

Foreword	5
Ch. I. Power characteristics and Relationships of Radar	7
1. Process of target radar detection	8
2. Transmitter power characteristic	9
3. Receiver power characteristic	10
4. Power characteristic of the radar station	11
5. Overall attenuation of transmitting and receiving routes	11
6. Reradiation factor	12
7. Radar operating range equation	14

Card 2/8

S/556/60/000/047/001/002
E077/E155

AUTHOR: Golev, O.G., Engineer

TITLE: Influence of the design of components on the
productivity and economics in cold-stamping operations

PERIODICAL: Moscow. Aviatsionnyy tekhnologicheskii institut.
Trudy. No. 47. Moscow, 1960. Nekotoryye voprosy
tochnosti tekhnologii priborostroyeniya, pp. 56-59

TEXT: Some simple components that are frequently used in
instrument manufacture have been slightly redesigned to save
losses in material due to cut-offs and to increase productivity.
The changes are evident from the illustrations, Figs. 1, 2, and 5.
In which sketches 5 show the initial utilisation of the material
and sketches 6 show the utilisation of the material after slight
redesigning. In the case of the component shown in Fig.1, the
productivity was doubled; instead of one component per stroke, two
components per stroke are being produced, using a stamping-tool
design as shown in Fig.6. (the top part of the middle sketch shows
the section along 0-0 of the top sketch; the bottom part
of the middle sketch shows the section along 1-1)
Card 1/5

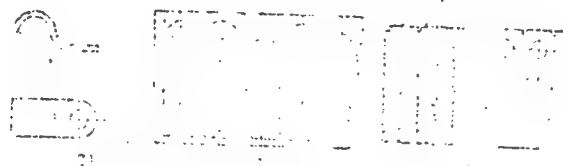
S/556/60/000/047/001/002
E073/E135

Influence of the design of components on the productivity and economics in cold-stamping operations

of the bottom sketch). It is stated that the redesigned stamping tools were only slightly more complicated than the original design, which is not shown.

There are 6 figures.

Fig.1



Card 2/5

JOHN, W. A., Doctor

"The United States is in the process of, I think, ..."

GOLEV, V.P., dotsent

Use of N.I. Pirogov's classic method of cutting combined with dioptrography and planimetry in modern topographoanatomical studies of some human organs. Trudy Izhev.gos.med.inst. 13:199-205 '51.

(MIRA 13:2)

1. Zaveduyushchiy kafedroy normal'noy anatomii cheloveka Izhevskogo meditsinskogo instituta.

(ANATOMY, SURGICAL AND TOPOGRAPHICAL)

GOLEV, V.P., dotsent

Anatomy and topography of the blood vessels in capsules of human
intervertebral joints. Trudy Izhev.gos.med.inst. 13:206-212 '51.

(MIRA 13:2)

1. Zaveduyushchiy kafedroy normal'noy anatomii cheloveka Izhevskogo
meditsinskogo instituta.

(SPINE--BLOOD SUPPLY)

GOLEV, V.P., dotsent

Investigation of the displacement of contiguous bone surfaces in
some joints of the human body during physical exercise. Trudy Izhev.
gos.med.inst. 13:458-464 '51. (MEHA 13:2)

1. Zaveduyushchiy kafedroy normal'noy anatomii Izhevskogo meditsinskogo
instituta.

(JOINTS)

(ATHLETES)

GOLEV, Vladimir Petrovich (Izhevsk State Medical Institute) for Doctor
of Biological Sciences on the basis of the dissertation defended 5 Jan. 1959
in the Council of the First Moscow Order of Lenin Medical Institute in
Sechenov, entitled: "Morphology of the ^{Occipital} Neck Region of Man (Biopetrographic
Investigation)". (EAVISSE USSR, 3-61, 19)

23
29

GOLIV, V.F.; DO SUAN KHOP

Methods of teaching and research in the field of morphology in the Democratic Republic of Vietnam. Arkh. anat., gist. i embriol. 47 no. 11:95-98 N '64 (MIRA 1964)

1. Kafedra anatomii Izhevskogo meditsinskogo instituta (zav. - prof. V.F. Goliv) i kafedra anatomii (zav. - prof. Do Suan Khop) Khaoynskogo meditsinskogo instituta, Demokraticeskaya Respublika V'yetnam. Adres avtorov: Izhevsk, Meditsinskiy institut, kafedra normal'noy anatomii (for Goliv); Khanoy, Demokraticeskaya Respublika V'yetnam, Meditsinskiy institut, kafedra normal'noy anatomii (for Do Suan Khop). Submitted January 10, 1964.

GOLEV, Ya. I.

The development of long term agricultural credit in the U.S.S.R.
Fin.SSSR 17 no.2:54-63 F '56. (MIRA 9:6)

1.Predsedatel' pravleniya Sel'skokhozyaystvennogo banka SSSR.
(Agricultural credit)

GOLEV, Yakov Il'ich; ROSHCHINA, L., red.izd-va; LEBEDEV, A., tekhn.red.

[Agricultural credit in the U.S.S.R.] Sel'skokhozyaistvennyi kredit
v SSSR. Moskva, Gosfinizdat, 1958. 77 p. (MIRA 11:5)
(Agricultural credit)

GOLEV, Ya. I

Reorganization of machine-tractor stations and work of the
Agricultural Bank. Fin. SSSR 19 no. 7:17-26 J1 '58. (MIRA 11:8)

1. Predsedatel' Pravleniya Sel'skokhozyaystvennogo banka SSSR.
(Agricultural credit)

VALEYEV, A.M.; GOLEV, Yu.D.; GOLEVA, Z.N.; GOLOVKO, R.Ye.; ZAV'YALOVA, B.A.;
ZARETSKIY, B.A.; ZVEREV, Ye.A.; LIPINSKIY, P.A.; MANGUSHEV, I.Kh.;
MEYZLER, M.Kh.; MUTOVKIN, V.A.; RUDAKOV, Ya.D.; RUKOTANOV, B.P.;
KHASANOV, G.M.; ESTRIN, Z.I.; ZUDIN, B.A., red.; BORUNOV, N.I., tekhn. red.

[Adjustment and operation of equipment in the Novo-Ufimskii Heat and
Electric Power Plant] Naladka i eksploatatsiya oborudovaniia na Novo-
Ufimskoi TETs. Moskva, Gos. energ. izd-vo, 1961. 175 p. (MIRA 14:9)
(Bashkiria—Electric power plants)
(Bashkiria—Heating from central stations)

BORISOV, Ye.F., dots.; BRETEL', E.Ya., prof.; BUKH, Ye.N., dots.;
VASHENTSEVA, V.M., dots.; GOLEVA, Yu.P., kand. ekon. nauk;
GOLEVA, A.P., kand. ekon. nauk; DEMOCHKIN, G.V., dots.;
DONABEDOV, G.T., kand. ekon. nauk; YERMOLOVICH, I.I., dots.;
KALYUZHNIY, V.M., dots.; KORNEYEVA, K.G., dots.; KUZNETSOVA,
A.S., prof.; MIKROSHNICHENKO, V.S., dots.; MYASHNIKOV, I.Ya.,
kand. ekon. nauk; PIKIN, A.S., dots.; SIDOROV, V.A.; SMIRNOV,
A.D., dots.; SOLOV'YEVA, K.F., dots.; SOROKINA, I.F., dots.;
TARUNIN, A.F., kand. ekon. nauk; KHARAKHASH'YAN, G.M., prof.;
MENDEL'SON, A.S., red.; SHVEYTSEV, Ye.K., red.; ROTOVA, R.S.,
red.; GARINA, T.D., tekhn. red.

[Economics of socialism] Politicheskaya ekonomiya sotsializ-
ma. Moskva, Gos.izd-vo "Vysshaya shkola," 1963. 476 p.
(MIRA 17:2)

GOLEVA, G.A.

Geochemistry of underground waters in mineral deposits of
the Western Ukraine. Probl.geokhim. no.1:228-248 '59.
(MIRA 13:7)
(Ukraine, Western--Water, Underground)

GOLEVA, G.A.

Hydrogeological characteristics of the formation of sulfur deposits
in the cis-Carpathian region. Sov.geol. 5 no.2:88-99 F '62.

(MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrogeologii
i inzhenerney geologii.

(Carpathian Mountain region--Water, Underground)

(Carpathian Mountain region--Sulfur)

AL'TOVSKIY, M. Ye.; GOLEVA, G.A.; ERAYAN, S.P.; OLIVAROVA, I.I.;
TORAKOV, A.N.; PROLOV, K.M.; SHVED, V.K.

Development of V.I.Vernadskii's concept in present-day hydrology.
Trudy Vsesoyuznogo nauchno-issledovatel'skogo tsentra (MIRA 17:10)

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GOLEVA, G.O. [Holieva, H.O.]

Studying the hydrogeology of the Truskavets region. Pyt.geol.
no.9:188-199 '58. (MIRA 13:4)
(Truskavets region--Water, Underground)

GOLEVA, N. G.

USSR/Medicine - Physiology

PL-077

Card 1/1 sub 33-20/22

Author : Goleva, N. G.

Title : Recording respiratory movements in birds

Periodical : Fiziol. zhur. 40, 360-363, May/Jun 1954

Abstract : A new method of recording respiratory movements in birds is described. A description is given of a pneumograph containing an adjustable band which can be tied around the thorax of a bird. Respiratory movements of the thorax of doves, owls, merlins, and bullfinches were successfully measured with the aid of this pneumographic band. This method is superior to any method previously used, because the normal behavior of birds examined is not restricted. Conditioned reflex was formed easily enough in owls. Diagrams. Four Soviet references.

Institution : Division of Comparative Physiology and Pathology of Higher Nervous Activity, Institute of Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

Submitted : August 17, 1953

GOLEVA, R.V.

Intraformational horizon in the lower Liassic volcanic formation
(Caucasus, Northern Ossetia). Izv.AN SSSR.Ser.geol. 35 no.8:97-99
Ag '60. (MIRA 13:2)

1. Geologiya yemochnaya partiya Svkavtsvetmetrazvedka, g.
Ordzhonikidze.

(Caucasus--Geology, Stratigraphic)

L 10071-63 EPF(c)/EWT(m)/EPF(a)-2/BDS--APFTC/ASD/HSD--Pr-4/Pu-4
ACCESSION NR: AR3000346 8/0058/53/000/004/A042/A042

SOURCE: RZh. Fizika, Abs. 4A348

AUTHOR: Tsenter, E. M.; Kosolapov, M. G.; Goleva, V. I. 64

TITLE: Spark counter for the control of Alpha contamination of external surfaces of polonium-beryllium neutron sources 9

CITED SOURCE: Sb. rabot po nekotorym vopr. dozimetrii i radiometrii ionizir. izlucheni. Vyp. 2. M., Gosatomizdat, 1961, 249-257

TOPIC TAGS: Spark counters, Alpha particles, air or argon filled

TRANSLATION: The construction is described of a spark detector of the well type with a measurement geometry close to 4 Pi, intended for the determination of the degree of Alpha contamination of the exterior surfaces of Po-Be neutron sources. The detector is a combination of a cylindrical and end-window counter, connected to form a single structure. The cylindrical counter consists of a cylinder (cathode) 70 mm. in diameter, 2 rings, an insulator, and 7k tungsten filaments

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L 10071-63
ACCESSION NR: AR3000346

0

0.06 mm. in diameter (anode), stretched at a distance of 1.2 mm. from the inside surface of the cylinder, parallel to its generatrix. The end-window counter consists of a flat round disk (cathode), inserted in a Plexiglas mount, and 30 tungsten filaments (anode) 0.06 mm. in diameter. The gap between the filaments and the disc amounts to 1.2 mm. Both counters are secured to a Plexiglas disc, placed in a metallic housing, and operate independently of each other. The main operating characteristics of the counter are presented for both atmospheric air and argon as a filler. The counting efficiency for Alpha particles and neutrons are respectively 3 and 0.00011% for air and 12 and 0.00004% for argon. The described spark counter can be used successfully for the registration of Alpha particles against an intense background of Beta and Gamma radiation.

DATE ACQ: 14May63

ENCL: 00

SUB CODE: PH

1m/ *ja*
Cord 2/2

KSHANOVSKIY, S.A., kand.med.nauk; CHAPLYGINA, M.N.; ZHILKEVICH, A.P.;
GOLEVA, V.K.

Experience with wide use of intracutaneous BCG revaccination in
rural areas of Khmel'nitskiy Province. Probl.tub.41 no.11:7-11 '63.
(MIRA 17:9)

1. Iz Ukrainskogo nauchno-issledovatel'skogo instituta tuberkuleza
i grudnoy khirurgii (dir. - dotsent A.S.Mamolot) i Khmel'nitskogo
oblastnogo otdela zdoravookhraneniya (Zav.Ye.S.Grigor'yeva).

GOLEVA, Yuliya Pavlovna; SHVEYTSEY, Ye.K., red.; MURASHOVA, V.A., tekhn.
red.

[Loan capital and credit] Ssudnyi kapital i kredit. Moskva, Gos.
izd-vo "Vysshaya shkola," 1961. 45 p. (MIRA 14:12)
(Finance)

BORISOV, Ye.F., dots.; BREGEL', E.Ya., prof.; BUKH, Ye.M., dots.;
VASHENTSEVA, V.M., dots.; GOLEVA, Yu.P., kand. ekon. nauk;
GOLEVA, A.P., kand. ekon. nauk; DEMOCHKIN, G.V., dots.;
DONABEDOV, G.T., kand. ekon. nauk; YERMOLOVICH, I.I., dots.;
KALYUZHNIYY, V.M., dots.; KORNEYEVA, K.G., dots.; KUZNETSOVA,
A.S., prof.; MIKOSHCHENKO, V.S., dots.; MYASHNIKOV, I.Ya.,
kand. ekon. nauk; PIKIN, A.S., dots.; SIDOROV, V.A.; SMIRNOV,
A.D., dots.; SOLOV'YEVA, K.F., dots.; SOROKINA, I.F., dots.;
TARUNIN, A.F., kand. ekon. nauk; KHARAKHASH'YAN, G.M., prof.;
MENDEL'SON, A.S., red.; SHVEYTSEK, Ye.K., red.; ROTOVA, R.S.,
red.; GARINA, T.D., tekhn. red.

[Economics of socialism] Politicheskaya ekonomiya sotsializ-
ma. Moskva, Gos.izd-vo "Vysshaya shkola," 1963. 476 p.
(MIRA 17:2)

VALEYEV, A.M.; GOLEV, Yu.D.; GOLEVA, Z.N.; GOLOVKO, R.Ye.; ZAV'YALOVA, B.A.;
ZARETSKIY, B.A.; ZVEREV, Ye.A.; LIPINSKIY, F.A.; MANGUSHEV, I.Kh.;
MEYZLER, M.Kh.; MUTOVKIN, V.A.; RUDAKOV, Ye.D.; RUKOVANOV, B.P.;
KHASANOV, G.M.; ESTRIN, Z.I.; ZUTIN, B.A.; red.; BORUNOV, N.I., tekhn. red.

[Adjustment and operation of equipment in the Novo-Ufinskii Heat and
Electric Power Plant] Naladka i ekspluatatsiya oborudovaniia na Novo-
Ufinskoi TETs. Moskva, Gos. energ. izd-vo, 1961. 175 p. (MIRA 14:9)
(Bashkiria—Electric power plants)
(Bashkiria—Heating from central stations)

~~FILIPOWICZ, B.~~ GOLEWSKI, S.

FILIPOWICZ, B.; GOLEWSKI, S.; PILEK, K.; SKARZYNSKI, J.

Ionophoretic determination of composition of nucleotides in ribonucleic acid of the pancreas. Acta physiol. polon. 5 no.4:629-633 1954.

1. Z Zakładu Chemii Ogólnej i Chemii Fizjologicznej Akademii Medycznej w Łodzi. Kierownik: prof. dr B. Filipowicz.

(NUCLEIC ACIDS, metabolism,

ribo, in pancreas, iontophoresis of nucleotides)

(NUCLEOTIDES, determination,

iontophoresis in pancreatic ribonucleic acid)

(PANCREAS, metabolism,

ribonucleic acid, iontophoresis of nucleotides in)

(ION TRANSFER,

iontophoresis of nucleotides in pancreatic ribonucleic acid)

GOLEWSKI, S.

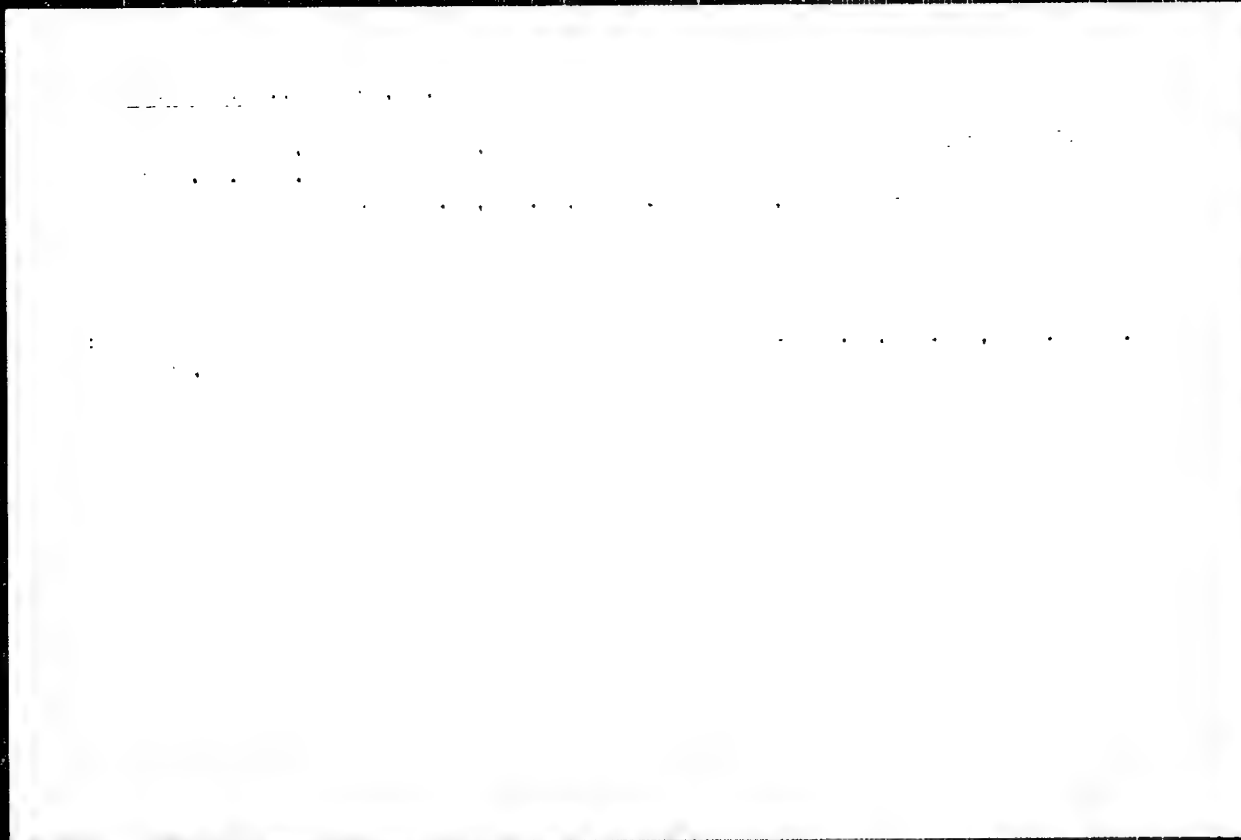
Regularities in the composition of pancreas ribonucleic acids. B. Filipowicz, S. Golewski, and R. Pilek (School Med., Lodz). *Bull. intern. panth. Med.*, Clasic II, 3, 7-10 (1955) (in English).—The compn. of ribonucleic acids (NRA) isolated from human pancreas showed the ratio of purines to pyrimidines to be close to 1 and that of adinin to uracil and guanine to cytosine to occur in equimolar quantities. Similar results were obtained earlier by Filipowicz, et al. (*Acta Phys. Polon.* 5, 6:2(1954)) on the compn. of NRA isolated from ox pancreas, and by Chargaff (*C.A.* 45, 10287) on the compn. of deoxyribose nucleic acids (DNA), with thymine taking the place of uracil in NRA. The above results suggest a similar structure in NRA and in DNA, namely, that of a double-stranded helical structure.

Seymour Elertman

(2)

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GOLEWSKI, S.

1946. Composition of RNA from normal pancreas. M. Filipowicz, G. Golembiński, and H. H. Rabinowitz. *Biochem. J.* 42, 99-105 (1948). Total Physical Chem. Abstr. 42:1042, 1948. RNA extracted from human and rat pancreas was purified by extraction with 10% NaCl solution and upon addition of 50% ethanol (0.8:1.0) and the resulting ribonucleotide mixture separated by ion exchange chromatography. Total P was estimated and the results obtained by potentiometrically and spectrophotometrically. Adenine, uracil, guanine, cytosine, and uracil + pyrimidines ratios were found to be near 1:1 and a quantitative analysis was established by using the keto and amino groups in position 2. It is concluded that the structure of RNA is similar to that of DNA, i.e., a repeating structural unit with slight differences in corresponding nitrogenous base groups. (Polish)

FILIPOWICZ, Bronislaw; PILEK, Kazimierz; WITKOWSKI, Slawomir; GOLEWSKI,
Stanislaw

Nucleic acids in the blood. I. Content of nucleic acids in human
blood serum. Polski tygod.lek. 15 no.15:537-538 11 Apr '60.
(NUCLEIC ACIDS blood)

GOLEWSKI, St.

Phosphorylating enzymes of nucleic acids. I. Incorporation of [^{32}P] orthophosphate into thymus nucleic acids. Acta biochim. pol. 9 no.4: 367-372 '62.

1. Department of General and Physiological Chemistry, Medical School, Lodz.

(THYMUS GLAND) (RNA) (PHOSPHATES)

GOLBY, M.; LYAPUNOV, B.

[The electric power plant] Fabriki elektrichestva. Moskva, Gos.
izd-vo detskoi lit-ry, 1953. 158 p. (MLRA 7:2)
(Electric power plants)

[illegible]

271

Goleyevskiy A.A Prof.

Voprosy mekhaniki struynogo dvizheniya zhidkostey i gazov; abrisy i fizicheskiye modeli (Problems of Mechanics of Jet Flow Motion of Fluids and Gases; Contours and Physical Models) Moscow, Mashgiz, 1957, 87 p. 1,000 copies printed.

Sponsoring agency. Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti. Leningradskoye oblastnoye pravleniye.

Tech. Ed : Sokolova, L. V.

PURPOSE: This work will be useful to designers in various branches of machine building. It may help in the solution of problems of fluid mechanics.

COVERAGE: This booklet is a summary of the author's more voluminous work, which will be published under the title "Development of the Theory of Fluid Motion in Other Fluids and the Interaction with Solid Bodies" and which represents 30 years of the author's work in this field. In this abbreviated form the author presents in advance for the

Card 1/4

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Problems of Mechanics of Jet Flow Motion of Fluids (Cont.)

critical scrutiny of the reader, some new conceptions, his method of reasoning, the physical models of submerged jet flow, and some samples of integration. In the introduction, the author quotes the criticisms of the Prandtl-Karman 3-dimensional flow theory made by Soviet authorities on hydrodynamics, who consider the application of this theory to the study of submerged jet streams to be erroneous. There are 24 Soviet references. The following personalities and their respective fields of interest are mentioned: Satkevich, A.A., Prof. and Fridman, A.A., Acad., investigation of an injector and the calculation of jet pumps (about 1930); Nikuradze, - research on pulsation in conduits; Yes'man, I.G., Acad., called by the author the "founder of Soviet hydraulics"; Simonov, A.A., Dr. of Techn. Sciences - study of the boundary layer and of turbulence; Zamarin, Ye. A. - boundary layer study; Yevreinov, V.N., Prof. - critic of the "Göttingen Prandtl school"; Krylov, A.N., Acad., Zamarin, Ye.A., Acad. - hydraulics; Bakhmet'ev, B.A., - modelling of turbulence; Milovich, A.Ya., Prof. - one of the first scientists to study problems of the submerged jet stream (1908); Tsimm, V., Tryupel', T., and Ivantsev, G.P., experi-

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Problems of Mechanics of Jet Flow Motion of Fluids (Cont.)

mental research work and theoretical considerations on submerged jet streams which led to the definition of the "Konovalov Effect": Tolmin, Prandtl, and Schlichting elaborated the theory of a free submerged jet stream; Abramovich, G.N. and Loytsyanskiy, L.G. completed the study of the theory of the free submerged jet stream and published it in their works; Lyakhovskiy, D.N. and Baturin, V. V. were the authors of many works on fluid mechanics; Bakharev, V. A., the author of an original theory on jet streams; Pozdnyunin, V.L. Acad.; Kochina, Ye. Ya., Corresponding Member of the Academy; and Kirpichev, M.V., Acad. - scientists in the field of fluid mechanics. For the construction of physical models and for the verification of the derived equations the author used works of the following authors: Linchevskiy, V.P.; Sadovskaya, N.N., - Grum-Grzhimaylo, V. Ye.; Baturin, V.V.; Taliyev, V.N.; Kuzmin, M.A.; Shvab, V.A.; Lyapin, A.N.; Keller, S.Yu.; Yarin, P.S.; Shakh, A.K.; Arens, G.A.; and Borman, L.D.

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Problems of Mechanics of Jet Flow Motion of Fluids (Cont.)

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AVAILABLE: Library of Congress

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GOLEZ, Z.

Television monoscope. p. 104

RADIOAMATER. (Savez radioamatera Jugoslavije) Beograd, Yugoslavia
Vol. 13, no.4, April 1959.

Monthly list of East European Accessions (EEAI) LC, Vol.2, no.9, Sept 1959

Uncl.

GOL'F, I. (gorod Ivanovo).

Why are there so few women radio operators in Ivanovo?

Radio no.10:10-11 '56.

(MIRA 9:11)

(Ivanovo--Radio operators)

GOL'FAND, A.D., dotsent, kand.tekhn.nauk

Technological calculation and requisites for increasing the effectiveness of various types of conveyer flow. Trudy LTIKHP 13:79-95 '57. (MIRA 13:6)

1. Kafedra tekhnologicheskogo oborudovaniya pishchevykh proizvodstv Leningradskogo tekhnologicheskogo instituta kholodil'noy promyshlennosti.
(Conveying machinery)

GOL'FAND, D.I.

Simplified plasma coagulation test; author's abstract. Zhur.mikrobiol.epid.1
immun. no.9:55 S '53. (MLEA 6:11)

1. Iz kafedry detskey khirurgii (zaveduyushchiy - professor N.I.Garber)
Dnepropetrovskogo meditsinskogo instituta (direktor - dotsent I.M.Kucheryavyy).
(Bleed--Plasma)

TO: [REDACTED] FROM: [REDACTED], [REDACTED], [REDACTED]

[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]
[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]
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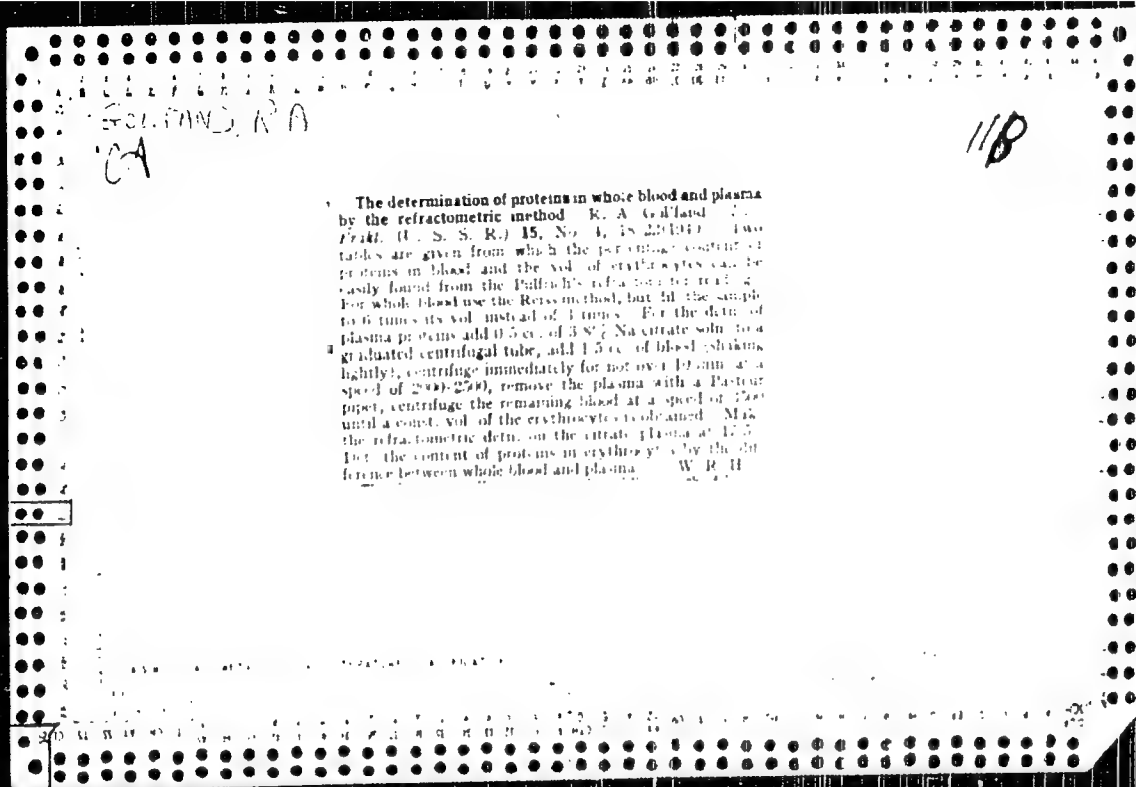
GOLFAINE, K. M.; S/HVIREV, B. G

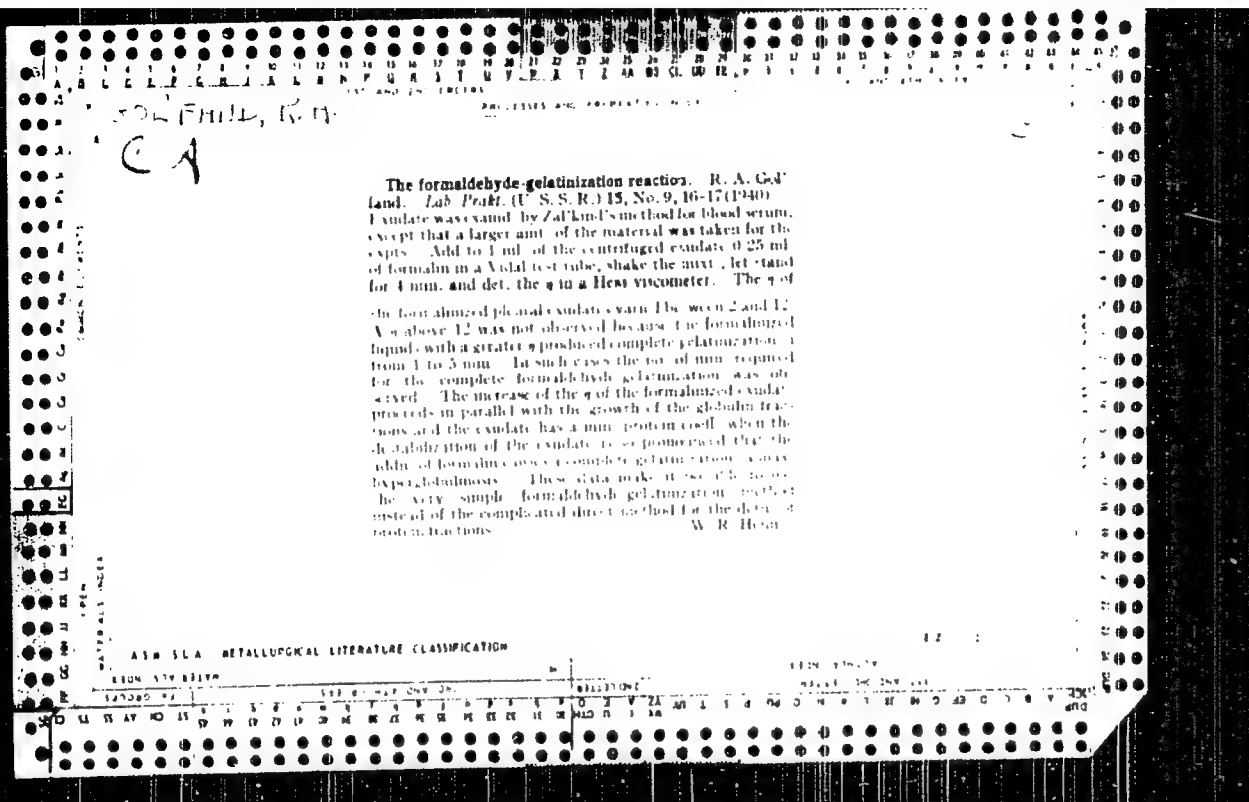
"Investigation of Low Alloy High Speed Steel Type 42," Metallurg (1940)
No. 1, pp 36-42.

B-84570, 20 Apr 55

and B-86357

and B-59984





Gol'fand, Yu. A.

Gol'fand, Yu. A. On an isomorphism between extensions of groups. Doklady Akad. Nauk SSSR (N.S.) 40, 1123-1125 (1948). (Russian)

The author points out that the construction of Schreier [Monatsh. Math. Physik 34, 165-180 (1926); Abh. Math. Sem. Univ. Hamburg 4, 321-346 (1926)] for all the extensions of a group A by a group B may yield extensions which are seemingly different but actually isomorphic, leaving one with the problem of identifying the isomorphic extensions. An extension G may have several normal divisors isomorphic to A . In a fashion natural to the Schreier construction, one of these, A_0 , is selected. An isomorphism between two extensions G and H (of A by B) is said to be of the first kind if the A_0 of G is carried onto the A_0 of H . A group of transformations Ω is defined on the set of all the Schreier extensions of A by B , each transformation represented by a triple

consisting of a function u on B into A with $u(1_B) = 1_A$ and a pair of automorphisms φ and ψ of B and A , respectively, multiplication of triples being defined in a special way. The principal result, a partial solution of the isomorphism identification problem, is that G and H , two extensions of A by B , are connected by an isomorphism of the first kind if, and only if, G and H are in the same transitivity class with respect to Ω , all such isomorphisms being realized by elements of Ω . A sufficient condition on A and B is found for this partial solution to be the complete solution of the isomorphism problem. For a somewhat different point of view, see Baer [Math. Z. 38, 375-416 (1934)].

P. Haimo (St. Louis, Mo.).

Source: Mathematical Reviews,

Vol. 9 No. 10

Gol'fand, Yu. A.

Gol'fand, Yu. A. On groups all of whose subgroups are
special. Doklady Akad. Nauk SSSR (N.S.) 60, 1313-
1315 (1948). (Russian)

Miller and Moreno [Trans. Amer. Math. Soc. 4, 398-404
(1903)] investigated the problem of finding those finite
non-Abelian groups for which every proper subgroup is
Abelian. Schmidt [Rec. Math. [Mat. Sbornik] 31, 366-371
(1924)], in a more general investigation, found that all the
(finite) groups of type S are of an order $p^\alpha q^\beta$, where p and q
are primes. A group of type S is a nonspecial group, every
proper subgroup of which is special, where a special group
is one which is the direct product of cyclic groups of prime
power orders. In the present paper it is found that, for fixed
 p , q and α , there exists essentially one group Γ_0 of type S
with maximal order $p^\alpha q^{\beta_0}$, where $\beta_0 = b$ if b is odd and
 $\beta_0 = \frac{1}{2}b$ if b is even, where b is the least positive integer for
which $q^b \equiv 1 \pmod{p}$. For fixed p , q and α , all other groups
of type S may be obtained from Γ_0 by reducing it with
respect to its central normal divisors. Let Σ be the subgroup
of order q^β of a group Γ of type S with order $p^\alpha q^\beta$; and let Φ
be the largest normal divisor of Γ included in Σ . Typical
of the author's results are the following. If Σ is non-Abelian,

every element of Φ has order q , the same result holding for
elements of Σ if $q \neq 2$. For non-Abelian Σ , Φ is also the center
and first derivative of Σ . P. Haimo (St. Louis, Mo.).

Source: Mathematical Reviews,

Vol

No. 10

GOL'FAND, YU. A.

Gol'fand, Yu. A. Metaspecial groups. Mat. Sbornik N.S. 27(69): 229-248 (1950). (Russian)

Let G be a finite solvable group, $\phi(G)$ the minimal normal subgroup of G such that its factor-group is special. Let $G = H_0 \supset H_1 \supset \dots \supset H_k = 1$ be the descending special series for G , that is, $H_i = \phi(H_{i-1})$ for $i = 1, 2, \dots, k$. If $k \leq 1$, G is called metaspecial. The principal results of this paper are arithmetic criteria for the natural number g in order that every group of order g should be, firstly, special or secondly, metaspecial. Let L_1 be the class of all natural numbers having no divisor of the form p^2q , where p and q are distinct primes and λ is the exponent of p modulo q . Let L_2 be the class of all natural numbers having no divisor of the form p^2q^2r , where p, q, r are primes, $p \neq q, q \neq r$, where λ is the exponent of p modulo q , μ is the exponent of q modulo r , and $m(\lambda, \mu)$ is the least common multiple of λ and μ . Let g be a natural number; every group of order g is

special if and only if g belongs to L_1 ; every solvable group of order g is metaspecial if and only if g belongs to L_2 . Various applications are cited, including some known results previously obtained by other methods. Other theorems in this paper indicate the broadness of the classes L_1 and L_2 or give conditions for determining whether a particular number belongs to one of the classes.

R. A. Godd.

Source: Mathematical Reviews,

Vol. 12 No. 1

SPM
220

GOL'FAND, YU. A.

Gol'fand, Yu. A. On the group of automorphisms of the holomorph of a group. Mat. Sbornik N.S. 21(69), 33-350 (1950). (Russian)

Let G be a group, A its group of automorphisms, Γ its holomorph, Ω the group of automorphisms of Γ , Δ the subgroup of Ω leaving G invariant, Σ the group of inner automorphisms of Γ . A mapping $\alpha(x)$ of A into G is a crossed character if $\alpha(\alpha\beta) = \alpha(\alpha)\alpha(\beta)$; it is regular if $\alpha \rightarrow \alpha\phi[u(\alpha)]$ is an automorphism of A , where $\phi(x)$ denotes the inner automorphism by x . For τ in G the function $u(\alpha) = \tau^{-1}\alpha\tau$ is a principal crossed character. The regular crossed characters form a group U , and the principal ones a normal subgroup V of U . The groups Δ and Σ are semi-direct products of A with U and V respectively. In special cases more can be said. If G is noncommutative and characteristically simple, then $|\Omega/\Sigma| = 2$. If G is cyclic of odd order, or Abelian of type (p, p, \dots, p) with p odd, then Γ is complete, that is, it is a complete group with all its automorphisms inner. J. Kaplinsky (Chicago, Ill.).

Source: Mathematical Reviews,

Vol.

12

1950

GOLFAND, Yu. A.

USSR: Clear Physics - Pion-Nucleon Interaction

FD-713

Card 1, 1 : Pub 146-1 11

Author : Tuma, I. I.; Gol'fand, Yu. A.; and Feynberg, V. Ya.

Title : Semiphenomenological theory of interaction of pions with nucleons. I

Periodical : Zhur. eksp. i teor. fiz., 26, 649-667, Jun 1954

Abstract : Analyze the scattering of pions by nucleons under damping. If adequate four free parameters are chosen, a satisfactory agreement with experimental data, with the angular distribution of scattered pions, and with the dependence of cross sections on energy within the tested energy range can be attained. 14 references, including 10 foreign.

Institution : Physics Institute imeni Lebedev, Acad Sci USSR

Submitted : January 6, 1954

USSR/Physics - Quantum mechanics

FD-1817

Card 1/1 Pub 146-2/25

Author : Gol'fand, Yu. A.

Title : Construction of the function of propagation by the method of quasi-fields

Periodical : Zhur. eksp. i teor. fiz. 28, 140-150, February 1955

Abstract : The author develops an apparatus of quasi-fields by means of which he constructs an expression for propagation functions. He demonstrates that the propagation functions obtained by this method are identical to the propagation functions of ordinary theory. For the propagation functions he gives a closed expression in the form of an infinite-fold integral. The author notes that one of the clearest peculiarities of the modern state of the quantum theory of wave fields is the very good agreement of the results of quantum electrodynamics with experimental data, while the results of the meson theory (existing theory of interaction of pi-meson and nucleon fields) possess only a qualitative character and cannot be reduced to any satisfactory quantitative agreement with data. Sixteen references (e.g. L. D. Landau, A. A. Abrikosov, I. M. Khalatnikov, I. M. Gel'fand, R. A. Minlos, Ye. S. Fradkin, all in DAN SSSR, 1954).

In titution: Physics Institute im. P. N. Lebedev, Academy of Sciences USSR

Sub : July 10, 1954

Gol'fand, Yu. A.
USSR/Nuclear Physics - Elementary Particles

C-3

Abst Journal : Referat Zhur - Fizika, No 12, 1956, 33919

Author : Gol'fand, Yu. A.

Institution : Physics Institute, Academy of Sciences USSR

Title : On an Estimate of the Cross Section of the π^+ p-Scattering from
the Cross Section of the π^- d-Scattering near Resonance

Original

Periodical : Zh. eksperim. i teor. fiziki, 1956, 30, No 2, 413-414

Abstract : An estimate is made of the fundamental effects that reduce the magnitude of the cross section of scattering of π^- -mesons by a neutron tied in the deuteron compared with the corresponding cross section for the free neutron. It is shown (within the framework of the momentum approximation) that if one takes into account the internal motion of the nucleons in the deuterons, then the cross section is reduced by approximately 10%. The effect of

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USSR/Nuclear Physics - Elementary Particles

C-3

Abst Journal : Referat Zhur - Fizika, No 12, 1956, 33919

the interference of the waves scattered by the proton and by the neutron leads to a supplementary reduction in the cross section by a magnitude of the same order (Referat Zhur - Fizika, 1954, 3537). This leads to the conclusion that the small value of the cross section of π^+ -mesons with protons (equal in accordance with the charge independence to the cross section of π^- -mesons with neutrons), obtained from deuteron data (Referat Zhur - Fizika, 1956, 6267) does not contradict the suggested resonant interaction between the π -mesons and the nucleon in a $^{3/2}P_{3/2}$ state.

Card 2/2

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1536
 AUTHOR GOL'FAND, JU.A.
 TITLE The Generalized Phase Analysis as a Result of the Unitarity of the S-Matrix.
 PERIODICAL Zhurn.eksp.i teor.fiz, 31, fasc.2, 224-231 (1956)
 Issued: 5.10.1956

The present work describes a method for the determination of the general shape of the scattering amplitude. On this occasion the usual formulae of phase analysis are generalized.

The S-matrix and the scattering amplitude: The operator which transforms the incident wave into the sum of the incident and scattered waves has here the shape $\hat{\Omega} = I_+ + \delta_+(\mathcal{E} - \mathcal{E}')R$. Here I denotes the unit operator and the matrix R the regular function of energy. Furthermore, it is true that $\delta_+(\mathcal{E}) = (1/2) \delta(\mathcal{E}) + 1/2\pi i \mathcal{E}$. Here only such scattering processes are investigated in which two colliding particles produce two scattered particles. When studying any scattering process a system of states must be determined which may be considered as closed (with respect to this scattering) in the known approximation. Only with a closed system it is possible to speak of a unitarity of the S-matrix. For the differential scattering cross section $d\sigma/d\Omega = |F|^2 v_\alpha / v_0$ and, more exactly $d\sigma/d\Omega = (4\pi^2/p_0^2) |(\vec{n}\sigma_\alpha | R | \vec{n}_0 \sigma_0 \alpha_0)|^2$ is found.

Here \vec{n} denotes the unit vector in the direction of one of the particles, σ - the variable of the total spin of the system, α - the totality of all the

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Zurn.eksp.i teor.fis, 31, fasc.2, 224-231 (1956) CARD 2 / 2

PA - 1536

remaining variables. The index "0" denotes the initial state.
The invariant operators \hat{W} and the extension of the S-matrix: If no exterior fields act upon the particles, the total angular momentum (including spin) \hat{M} of the system is conserved. It is then convenient to use a representation in which the quantities \hat{M}^2 and \hat{M}_z are diagonal. Here the complete orthonormalized system of the eigenfunctions of \hat{M}^2 and \hat{M}_z is constructed. A formula for the S-matrix in the momentum space is given; on this occasion the S-matrix is split up into diagonal blocks S_j , which correspond to the various values of j . In certain concrete cases the S-matrices can be further separated by making use of further theorems of conservation (conservation of the symmetry, of isotopic spin, etc.). Finally, the conclusions following from the unitarity of the S-matrix and the generalized phase analysis are dealt with. Above all the diagonal blocks S_j must be unitary matrices.

INSTITUTION: Physical Institute "P.N.LEBEDEV" of the Academy of Science in the USSR.

GOLFAND VU A

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1659
 AUTHOR GOL'FAND, JU.A.
 TITLE On the Transformation Properties of the Amplitudes of the electron -
 Positron Field.
 PERIODICAL Zhurn.eksp.i teor.fis, 31, fasc.3, 535 - 536 (1955)
 Issued: 12 / 1956

As every vector Φ can be obtained by the action of the creation operators on the vacuum Φ_0 , the transformations of Φ are reduced to transformations of Φ_0 and to transformations of the creation operators, i.e. of the amplitude of the field. The amplitudes of the field do not transform themselves in accordance with the spinorial representation of the LORANTZ group, and the amplitudes which correspond to the electron- and positron states are transformed independently according to uniform representations. Here an inhomogeneous LORANTZ group \mathcal{L} is investigated which contains spatial reflexions but no reflexions in time. The problem of reflexions in time is more complicated and requires a special investigation. On the occasion of transformations of the group \mathcal{L} the vacuum Φ_0 obviously remains constant. For the purpose of explaining the law of transformation of the field amplitudes, the operator of the field is written down in the following relativistically invariant form in the representation of interaction:

$$\Psi(x) = (2\pi)^{-3/2} \int \{ u(p) a(p) e^{-ipx} + v(p) b^+(p) e^{ipx} \} d\Gamma.$$
 Here F.EYNMAN's denotation system is always employed, and we put $\hbar = c = 1$. Integration is carried out over the hypersurface characterized by the conditions $p^2 = m^2$, $p_0 = E > 0$. $d\Gamma = (m/E) d^3p$ is the invariant element of the hypersurface and $u(p) = \| u_\mu^\alpha(p) \|$ is a matrix of 4 rows and 2 columns which is formed by two solutions of the DIRAC equations for positive

GOLIFAND, M. A.

1978
TRANSFORMATION PROPERTIES OF THE ELECTRON-
POSITRON FIELD AMPLIFIED IN A
-ony of Science, USSR, 1978, JETP (JETP) 46 (1978)
Apr.

AUTHOR GOL'FAND Yu.A., PA - 2649
 TITLE The Fermi Fields and Spinors of a Space of an Infinite Number of Dimensions.
 (Fermi-poya i spinory bezkonechnomernogo prostranstva -Russian)
 PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 1, pp 68-70, (U.S.S.R.)
 Received 5/1957 Reviewed 6/1957
 ABSTRACT The development of functional methods in the quantum theory of the field makes it possible to reduce the problem of the determination of the propagator of a system of particles which are in interaction to the problem of the determination of the propagator of a fermion. This fermion is assumed to move in any exterior field of corresponding BOSE particles. The present work examines a new aspect of this problem. On this occasion a somewhat unexpected connection of the theory of FERMI fields with the theory of the spinors of an infinitely dimensional space becomes apparent. For reasons of concreteness the author here deals with quantum electrodynamics, although all results may be transferred directly to all varieties of the meson theory. The operator of the quantized electron-positron field $\psi(x)$ is written down as follows in interaction representation: $\psi(x) = \sum u_n(x) a_n$. Here $u_n(x)$ denotes the complete orthonormalized system of the solutions of the DIRAC equation and a_n , according to the sign of the energy, denote either the operators of the annihilation of the electron or the operators of the creation of a positron. The following anticommutators apply: $\int_{n\alpha} \int_{n\beta} + \int_{n\beta} \int_{n\alpha} = 2\delta_{n\alpha\beta}$. Here $\int_{n1} = a_n + a_n^+$, $\int_{n2} = (a_n - a_n^+)/i$ denotes.

Card 1/2

The Fermi Fields and Spinors of a Space of an Infinite PA - 2649
Number of Dimensions.

These anticommutator relations make it possible to construct a spinorial representation of the rotation group E_∞ of an infinitely dimensional euclidean space by means of the orders of magnitude $\sqrt{n\alpha}$ etc. The operators of the infinitely small rotations (moments) in this representation have the form $M_{AB} = (1/4\pi) (\sqrt{A} \sqrt{B} - \sqrt{B} \sqrt{A})$, where A and B

are composed indices of the type $(n\alpha)$. The state vectors of the field ψ then prove to be spinors. Next, the connection between the spinorial and the vectorial representation of the rotations of the space E_∞ are investigated. The corresponding relations in the field theory occur in form of relations between the interaction representation and the HEISENBERG representation.

ASSOCIATION

PRESENTED BY I.E.TAMM, Member of the Academy

SUBMITTED 16.11.1956

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Card 2/2

AUTHOR: Goldfarb, Ya. A. SIV 5-15720007-4

TITLE: On the Theory of Weak Interaction. I. (K teorii slabykh vzaимодействiy. I.)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki. 1978, Vol. 55, Nr. 1, pp. 176-187 (USCR)

ABSTRACT: The hypothesis concerning the universal character of four-fermion interaction becomes more probable on the strength of the latest results obtained by investigations carried out in the field of weak interaction (Ref. 1) although important experimental data on β -decay are contradictory to it. The author is of the opinion that this situation must change, and he recommends a new scheme of universal four-fermion interaction, which differs from those usually employed by the author in which the quanta of W and Z are introduced into the theory. The difficulties caused by the inclusion of β -decay are avoided by describing electron- and positron decays by different Fermi interaction variants. For the representation of the fields of γ quanta-production it holds that

Chad 1, 5

On the Theory of Weak Interaction I

SVV, 57-58, 1967, 101

$\psi_1(x) = \sum \sqrt{(1-\beta^2)} e^{i p \cdot x} \psi_1(x)$ and for the fields of particle-annihilation

$\psi_2(x) = \sum \sqrt{(1-\beta^2)} e^{i p \cdot x} \psi_2(x)$ and

β - Pauli matrix, $\vec{v} = \frac{\vec{p}}{E}$ - the velocity vector of the particles ($\vec{p} = 1, 2$), and $a(\vec{p})$ and $a^\dagger(\vec{p})$ are the production and annihilation operators respectively. The Dirac matrix $\gamma = (\gamma_0, \vec{\gamma})$, and $\epsilon = \begin{pmatrix} 0 & 1 \\ -1 & 0 \end{pmatrix}$. It is shown that

although the theory recommended is invariant with respect to CP-CT- and PT transformations, this is not the case with respect to CPT transformations. Finally, the author discusses the application of his method to various examples as well as some experimental and theoretical conclusions. He thanks E. I. for his advice. There are 4 figures and 10 references.

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On the Theory of Weak Interaction I

S. N. Gerasimov

ASSOCIATION: Fizmatgiz institut im. P. N. Lebedeva Akademiya Nauk SSSR
(Physical Institute named P. N. Lebedev, AS USSR)

SUBMITTED: February 9, 1978

Card 3. 3

Author: K. P. Sin, Ia. A.
 Title: On the Theory of Weak Interactions. II (K teorii slaboykh vzaimodeystviy. II)
 Periodical: Zhurnal eksperimental'noy i teoreticheskoy fiziki. 1986, Vol. 53, No. 3, pp 726-730 (USSR)
 Abstract: The present paper is based on the ideas discussed in a previous paper (Ref. 1). The question is investigated by what non-Hermitian form the weak interaction Hamiltonian H_w can be introduced into the Hermitian total Hamiltonian. For the total Hamiltonian the following is set up:

$$\hat{H} = \begin{pmatrix} H_s & H_w \\ H_w^\dagger & H_s \end{pmatrix} \quad (\text{in Hilbert (Gil'bert) space with double number of dimensions})$$

 In this "double" Hilbert space the inversion operator $\hat{P} = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$ applies. (The "second" Hilbert space appears as the reflection of the "first")
 The Hamiltonian H_w is represented by four-component field

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On the Theory of Weak Interactions. II

UDC 53-35-4-24.5

spinors, which describe pairs of charged particles:

$$\text{Lepton pair } (e, \mu): \chi_L = \begin{pmatrix} p_a(\mu^-) + p_c(e^+) \\ i_a(e^-) - i_c(\mu^+) \end{pmatrix}$$

$$\text{Baryon pair } (p, \Sigma^+): \chi_B = \begin{pmatrix} p_a(\tilde{p}) + i_c(\Sigma^+) \\ i_a(\tilde{\Sigma}^+) + i_c(p) \end{pmatrix}$$

For the Hamiltonian one obtains

$$\mathcal{H}_w(\vec{x}, t) = \frac{g}{4\pi} \int_{-R}^R d\rho \left\{ (\bar{\chi}\psi)^R (\bar{\psi}\chi) + (\bar{\psi}\chi)(\bar{\chi}\psi)^R \right\}$$

For the χ -field it holds that

$$\chi(\vec{x}, t, \beta) \rightarrow \begin{cases} U_F \chi U_F^\dagger = \gamma_4 \chi^R(-\vec{x}, t, \beta) & (F) \\ U_C \chi U_C^\dagger = C \chi^T(\vec{x}, t, -\beta) & (C) \\ U_S \chi U_S^\dagger = C \gamma_5 \chi^R(-\vec{x}, -t, -\beta) & (S) \end{cases}$$

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with the following properties of the matrix C : $C \gamma_\mu C^{-1} = -\gamma_\mu^*$

in the Theory of Weak Interactions. I

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$$c^* = c^{\dagger} = c^{\dagger} = c; c^{\dagger} = c.$$

for the total Hamiltonian in Schrodinger (Schrodinger) representation it holds that $U_p H U_p^{\dagger} = U_p H U_p^{\dagger} = U_p H U_p^{\dagger} = H_p$

and for the total Hamiltonian \hat{H}

$$\hat{H} = H_s + \frac{1}{2} (H_w + H_w^{\dagger}) \Lambda_1 + \frac{i}{2} (H_w - H_w^{\dagger}) \Lambda_2$$

with $\Lambda_1 = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$, $\Lambda_2 = \begin{pmatrix} 0 & -i \\ i & 0 \end{pmatrix}$ is obtained.

If I is any elementary inversion, it holds that $\hat{I} = I \Lambda_1$, for

$\hat{H} : [\hat{H}, \hat{I}] = 0$, for the strong interaction Hamiltonian H_s : $[H_s, I] = 0$.

The author then gives a representation of U_p , U_c , and U_s as exponential functions of \vec{p} (cf. Ref. 2).

There are 3 references, of which are Soviet.

ASSOCIATION: Fizicheskii institut im. P. N. Lebedeva Akademii nauk SSSR
(Physics Institute imeni P. N. Lebedev of the Academy of Sciences, USSR)

Card 5, 4

21(1), 24(5)

194/56-37 1-26, 56

AUTHOR: Gol'fand, Yu. A.

TITLE: On the Introduction of an "Elementary Length" Into the Relativistic Theory of Elementary Particles

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki 1956
Vol 37, Nr 2(8), pp 504-509 (USSR)

ABSTRACT: The development of a theory of the elementary particles avoiding the "ultraviolet catastrophe" is impossible without the introduction of an elementary length l_0 , setting a limit to the dimensions to which the conventional concepts concerning space are correct. Another and equivalent possibility is the introduction of an "extreme mass" $\mu \sim 1/l_0$ into the theory. This extreme mass effects corresponding restrictions in the momentum space. In this paper the attempt is made to develop such a theory. The basic concepts can be defined briefly as follows: the four dimensional momentum space is a space with constant curvature. The radius of curvature of this space is the extreme mass μ_0 . The theory must now be developed in accordance with the geometry of the momentum space. In this paper the Feynman diagram technique is generalized in the sense of the geometry of a momentum space with constant curvature. No ultraviolet divergencies will presumably occur in

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SOV/56-37-2-26/56

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this scheme. In the first section the momentum space with constant curvature is discussed. The conventional theory corresponds to the case $\mu_0 = 0$. The numerical value of μ_0 must be determined experimentally. The metric differential form of this space $ds^2 = (1-p^2)^{-1} \{dp + (1-p^2)^{-1}(pdp)^2\}$ holds. The group of motions of the momentum space consists of all point transformations which leave the non-euclidian distance $D(p,q) = \ln(J + \sqrt{J^2 - 1})$, $J = (1-pq) / \sqrt{(1-p^2)(1-q^2)}$ invariant. This group includes the group of Lorentz transformations, which leave the absolute value of p^2 invariant and identically transform the point $p = 0$. Moreover, this group of motions includes the transformations of translation. The third section deals with the foundations of the diagram technique. The introduction of a momentum space with constant curvature into the theory requires a modification of the usual form of the conservation theorems of energy and momentum. The last two sections deal with some conclusions drawn from the non-commutativity of the "superposition" of momentum and the most simple self-

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energy diagrams. There are 3 figures and 2 references, 1 of which is Soviet.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR
(Institute of Physics imeni P. N. Lebedev of the Academy of Sciences, USSR)

SUBMITTED: March 11, 1959

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GOL'FAND, Yu.A.

Gradient transformations in quantum electrodynamics. Zhur. eksp.
i teor. fiz. 38 no.1:308-309 Jan '60. (MIRA 14:9)

1. Fizicheskiy institut im. P.N.Lebedeva AN SSSR.
(Quantum electrodynamics) (Transformations (Mathematics))

S/020/61/138/002/013/024
B104/B207

AUTHOR: Gol'fand, Yu. A.

TITLE: The threedimensional relativistic Schrödinger equation
applied to the two-body problem

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 138, no. 2, 1961, 331-333

TEXT: The author's aim was a relativistic generalization of the Schrödinger equation without increasing the number of independent variables. The equation derived differs insofar from the known equation by Bethe and Salpeter (Phys. Rev., 84, 1232 (1951)). The Schrödinger equation is represented in velocities with the velocity space being assumed as invariant with respect to the Lorentz transformations. From the geometrical point of view, the velocity space may be regarded as a three-dimensional Lobachevskiy space, the Lorentz group being the group of motion of this space. First, the author shows schematically that a transition from Euclidian geometry to Lobachevskiy's geometry in the velocity space corresponds to the transition from classical to relativistic mechanics. Subsequently, the interaction between two spinless particles with the

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masses m_1 and m_2 is studied, the system in the chosen representation being described by the wave function $\psi(v_1, v_2)$. The velocities v_1 and v_2 are substituted by the velocities

$$v = \frac{m_1}{M_0} v_1 + \frac{m_2}{M_0} v_2 \quad (4)$$

$$\omega = -\frac{m_2}{M_0} v_1 + \frac{m_1 + 2m_2 \text{ch } s}{M_0} v_2 \quad (5)$$

with

$$M_0 \equiv M_0(s) = \sqrt{m_1^2 + m_2^2 + 2m_1 m_2 \text{ch } s} \quad (6)$$

$$\text{ch } s = v_1 v_2 = v \omega \quad (7)$$

holding. (7) indicates that the "distance" between v and ω is equal to the "distance" between v_1 and v_2 . v defines the center of mass velocity and is assumed to be independent on the interaction. Accordingly, the velocity ω is the relative velocity. The interaction is described by the energy-

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pulse-operator which is defined by $\hat{P}_\mu = \hat{M} v_\mu$ (6). v_μ is the velocity of the center of mass accordingly to (4) and \hat{M} , the mass operator of the system. Thus, \hat{M} has to fulfill the following requirements: 1) \hat{M} is relativistically invariant. 2) \hat{M} commutes with the vector of the center of mass velocity. In analogy with the non-relativistic theory, the operator \hat{M} may be represented in the following form: $\hat{M} = M_0 + \hat{U}$, where the total mass M_0 of the "free" particles is given by (6); for \hat{U} an integral operator can be chosen the kernel of which depends on the relative velocity. To construct \hat{U} , the vector w is represented in the following form: $w = v \cosh s + z \sinh s$, where $vz = 0$, $z^2 = -1$ (10) holds for z . The amount of all vectors z , satisfying (10), is geometrically equivalent to the Euclidian unit sphere. For w' , the equation $w' = v \cosh s' + z' \sinh s'$ is given. \hat{U} depends on the vectors w and w' . A study of the triangle ww' , where v is a constant velocity, reveals that the length of the side ww' of this triangle is the following: $chw = ww' = \cosh s \cdot \cosh s' - \sinh s \cdot \sinh s' \cdot \cos \alpha$ (12). The angle $\angle ww'$ is defined by α and the following holds: $\cos \alpha = -zz'$. (12) may be written down in the form $4 \sinh^2 \frac{\alpha}{2} = -(z - w')^2$ (13). In the non-relativistic case

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S/020/61/138,008,011/011
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(13) equals the relation $(\vec{v} - \vec{v}')^2$, where \vec{v} and \vec{v}' are the three-dimensional relative velocities. It is obvious that (13) is the relativistic relation for the arguments of the kernel of \hat{U} . The equation for the relative motion may be written down in the following form:

$$\hat{M}\psi \equiv M_0(s)\psi(s, z) + \int U\left(4\operatorname{sh}^2\frac{\sigma}{2}\right)\psi(s', z')\operatorname{sh}^2 s' ds' d\Omega = M'\psi(s, z). \quad (14)$$

(14) satisfies all requirements and its spectrum may be discrete or continuous, depending on whether $M' < m_1 + m_2$ holds or $M' > m_1 + m_2$, where M' is the proper value of the total mass. In the non-relativistic limiting case (14) passes over into the non-relativistic Schrödinger equation. Yu. M. Shirokov is mentioned. There are 3 references: 2 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Fizicheskii institut im. P. M. Lebedeva Akademii nauk SSSR
(Physics Institute imeni P. M. Lebedev, Academy of Sciences USSR)

PRESENTED: January 13, 1961, by I. Ye. Tamm, Academician

SUBMITTED: December 27, 1960

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S/C56/62/C43/001/036/056
B102/B108

AUTHOR: Gol'dfand, Yu. A.
TITLE: Quantum field theory in a p-space of constant curvature
PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
no. 1(7), 1962, 256-267

ABSTRACT: In quantum field theory a new mathematical technique has been developed, in order to avoid difficulties in field theory, as e.g. the dependence of the law of interaction on the particle momentum. This theory is based on the p-space of constant curvature formerly introduced by the author (ZhETF, 37, 504, 1959). Its radius of curvature μ_0 acts as a cutoff parameter. This space of indefinite metric is here called pseudoelliptical. In the integration over the momenta of the virtual particles in this space one has to encounter a singularity on the boundary of the physical range ($p^2 = 1$), but this can be avoided. In this way a transition from a pseudo-elliptical to an elliptical p-space of positively definite metric is performed. The coordinate operators in the elliptical p-space are given by $\hat{x}_\mu = i\left\{\partial/\partial p_\mu + p_\mu(p_0/\partial p)\right\}$. The

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technique is illustrated by the example of a pseudoscalar meson theory. It permits calculating the matrix elements of any process, using finite expressions only. The amplitude operator representation and the generalization of the Schwinger equations (Proc. Nat. Acad. Sci. USA, 37, 452, 1951) for the Green's function to the field theory of p-space are especially discussed. Some features caused by the non-commutivity of the displacement operators $\hat{d}(k) = \hat{d}_0(k)\hat{d}_s(k)$ and not occurring in the common theory are discussed. Some of them are connected with departures from the laws of conservation of energy and momentum in particle collisions. The influence of the integral character of the mass operator on the state of physical particles is discussed here. In the case of small momenta $p_\mu \ll \mu_0$ the results of this theory go over into those of the common theory. There are 2 figures.

ASSOCIATION: Fizicheskii institut im. P. N. Lebedeva Akademii nauk SSSR
(Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR)

SUBMITTED: February 21, 1962
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S/056/63/044/00-020/044
B102/B186

AUTHOR: Gol'fand, Yu. A.

TITLE: Properties of the shifts in p-space of constant curvature

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44,
no. 4, 1963, 1248 - 1261

TEXT: The author has developed a field theory (ZhETF, 37, 504, 1959; 43, 256, 1962) in which the pseudo-Euclidean momentum space is replaced by a p-space with constant curvature; instead of the usual momentum addition operation a shift operation is introduced. The properties of the latter are now investigated in great detail for an elliptic p-space with positive-definite metric. Instead of the previously used "k-parametrization" (parametrization of the whole system of shifts by means of a vector k)

$$q = d_0(k)p = \frac{p\sqrt{1+k^2} + k(1 - pk/(1 + \sqrt{1+k^2}))}{1 - pk} \quad (1.1)$$

"l-parametrization"

$$q = d_0(l)p = l + \frac{1+l^2}{1-l^2-2lp}(l+p). \quad (2.1)$$

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is introduced; $k = 2l(1-l^2)$. (1.1) is appropriate for describing common additions (small p and k); in the case of large momenta, and especially when the case of $q=-p$ is covered, 1-parametrization is more convenient. With $q=-p$ the so-called focusing singularity arises, which is the cause of the anomaly in particle-antiparticle interactions with equal momenta. This case is particularly considered here, since it has no analogon in common Euclidean geometry. Special attention is paid to energy-momentum conservation; it can be shown that this conservation law remains exactly valid for elastic scattering of fermions. Otherwise it may be considered only as an approximate law in generalized field theory. The possibility of bound-state formation is also discussed for the baryon-antibaryon system with small coupling constant. It can be shown that it is not necessary to introduce any special mechanism of strong interactions into this theory. On the basis of only universal weak and electromagnetic interactions, the strong interactions appear as a kind of secondary effect due to the formation of mesons as compound particles. There are 3 figures.

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Properties of the shifts in...

S/056/63/044/004/020/044
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SUBMITTED: October 4, 1962

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GOL'FARD, Yu.A.

Space-time structure of the relativistic scattering matrix.
Zhur. eksp. i teor. fiz. 45 no.4:1067-1080 0 '83. (MIRA 16:11)

1. Fizicheskiiy institut imeni P.N.Lobacheva AN SSSR.

L 22144-65 EWT(1)/ ASDA-5/SSD/AFWL/AFETR/ESDD(p) LJP(c)

ACCESSION NR: AP5001855

S/0056/04/047/005/2298/2305

AUTHOR: Gol'fand, Yu. A.

TITLE: Extension of quantum mechanics to the case of discrete time

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 6, 1964, 2298-2305

TOPIC TAGS: quantum mechanics, state vector, density matrix, equation of motion, correspondence principle

ABSTRACT: A possible extension of the equations of quantum mechanics to include the case of discrete time is considered, and generalized equations of motion are constructed for the density matrix in this case. Some properties of the equations of motion are studied. The treatment is in general form, independent of any specific scheme for quantizing space-time, and it is pointed out that the combination of various particular ways of constructing quantized space time with these equations will lead in general to different physical theories. Among the features of this scheme is that a quantum mechanical system can be described in this scheme by means of the density matrix only, and not by means of a state vector. The

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equations of motion for operators in the Heisenberg representation and the conservation laws are generalized in a natural fashion for the case of quantized time. The most characteristic property of the equations considered is that they are not invariant under time reversal. This property can be expressed as a law of increase of an "entropy." This increase in entropy is not to be identified with the law of increase of entropy for macroscopic systems. In the limit when time is made continuous the equations go over into the usual Schrodinger equation for the density matrix, so that a correspondence principle is observed. The equation of motion derived exhibits a dissipativity property, which is manifest only as a result of the discreteness of the time, and disappears completely in the limit as time is made continuous. Orig. art. has: 44 formulas.

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Card 2/2

GOL'FARB, N.M.

Regularities of checker heating and ways to increase the
temperature of preheating; the blast furnace blow. Izv. vs.
ucheb. zav.; Chern. met. no.10:148-156 '60. (MIRA 13:11)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Air preheaters) (Heat regenerators)